

AMENDMENTS TO THE CLAIMS

This Listing of Claims will replace all prior versions and listings of claims in this application.

Listing of Claims:

1. (Currently Amended) A process for purifying crude caprolactam comprising
 - 1) converting a mixture (I) comprising 6-aminocapronitrile and water to a mixture (II) comprising caprolactam, ammonia, water, high boilers and low boilers in the presence of a catalyst,
 - 2) removing ammonia from the mixture (II) to obtain a mixture (III) comprising caprolactam, water, high boilers and low boilers,
 - 3) completely or partly removing water from the mixture (III) to obtain crude caprolactam (IV) comprising caprolactam, high boilers and low boilers, and
 - 4) distilling the crude caprolactam (IV) comprising
 - a) feeding the crude caprolactam (IV) and an inorganic acid which has a boiling point above the boiling point of caprolactam to a first distillation apparatus C1,
 - b) distilling the crude caprolactam IV and the inorganic acid in the first distillation apparatus C1, and removing a first subplot in the bottom region and a subplot in the top region of the distillation apparatus C1,
 - c) feeding the subplot from step b) to a second distillation apparatus C2,
 - d) distilling the subplot from step b) in the second distillation apparatus C2, and removing a first subplot in the bottom region and a subplot in the top region of the distillation apparatus C2,
 - e) feeding the subplot from step d) to a third distillation apparatus C3,

- f) distilling the first substream from d) in the third distillation apparatus C3, and removing a first substream in the bottom region of distillation apparatus C3 and removing purified caprolactam in the top region of distillation apparatus C3, and
 - g) feeding the first substream from step f) to the first distillation apparatus C1.
2. (Previously presented) A process as claimed in claim 1, wherein mixture (I) further comprises an organic liquid diluent.
3. (Original) A process as claimed in claim 2, wherein the liquid diluent is removed in step 3), before, during or after the removal of water from mixture (III).
4. (Previously presente) A process as claimed in claim 1, wherein low boilers are removed or high boilers are removed or low boilers and high boilers are removed between step 3) and step 4a).
5. (Original) A process as claimed in claim 4, wherein first low boilers and then high boilers are removed.
6. (Previously presented) A process as claimed in claim 4, wherein 6-aminocapronitrile is removed as a low boiler.
7. (Previously presented) A process as claimed in claim 1, wherein the inorganic acid used is phosphoric acid.
8. (Previously presented) A process as claimed in claim 1, wherein the weight ratio of the substream comprising purified caprolactam removed in the top region to the substream removed in the bottom region of the distillation apparatus C3 is in the range from 0.3 to 2.0.
9. (Previously presented) A process as claimed in claim 1, wherein at least a portion of the first substream obtained in step b) is mixed with the crude caprolactam (IV).

10. (Previously presented) A process as claimed in claim 9, wherein the weight ratio of the first substream obtained from the distillation apparatus C1 that is mixed with the crude caprolactam (IV) is in the range from 0.01 to 0.3.
11. (Currently amended) A process as claimed in claim 1, wherein at least a portion of the second substream obtained from the distillation apparatus C2 is recycled in step 3) ~~before the low boilers are removed.~~
12. (Previously presented) A process as claimed in claim 1, wherein the bottom temperature in the distillation apparatus C1 is in the range from 120 to 200°C.
13. (Currently Amended) A process as claimed in claim 1, wherein the pressure in one, two or three of distillation apparatus C1, C2, C3 is at least 40 bar, measured in the top region region.
14. (Currently Amended) A process as claimed in claim 1, wherein the first substream from distillation apparatus C3 is introduced at the top into of the distillation apparatus C1.
15. (Previously presented) A process as claimed in claim 8, wherein the inorganic acid used is phosphoric acid.
16. (Cancelled)
17. (Previously presented) A process as claimed in claim 10, wherein at least a portion of the second substream obtained from the distillation apparatus C2 is recycled in step 3) before the low boilers are removed.